OFFICIAL ANSWERS TO QUESTIONS SUBMITTED IN RESPONSE TO SOLICITATION NNJ07197762R

Question 82: I recommend revising Specification Section, 15900, paragraphs 1.1 (B) & (C) to require interface with either the existing AutomatedLogic WebCTRL system or the Honeywell Supervisory system known as the EBI. Also revise MEP drawing M803, Automatic Control Valve Schedule, for each Honeywell valve referenced place a note "or equivalent."

Answer 82: The new system for Building 20 must only interface with the existing EBI system per Specification Section 15900, Building Control System. Honeywell valves were used as the basis for design. Any valve manufacturer can be submitted that meets the design requirements.

Questions concerning sheet C- 20.5.0, Civil Site Details, Permeable Concrete Pavement:

Question 83: Concerning the Site Plan Detail:

The 6" soil stabilization with Lime/Flyash to a compaction of 94%. This will make the surface totally "IMPERMEABLE". If the water is to pass through the pavement surface, were is it going from there? The drain pipe around the perimeter will only take so much. At 35,000 sq ft or 75,000 sq ft and only around the perimeter a 10 year storm event (I believe 6" in 24 hours) with an impermeable sub base will challenge the surface with standing water. Is the sub base meant to be impermeable?

Answer 83: Yes, it is meant to be impermeable.

Question 84: What is the required minimum weight of the "non-woven -Geotextile filter fabric"?

Answer 84: The required minimum weight to be used, per industry standard, is 3.4 (oz/yrds sq.).

Question 85: The # 6 open graded aggregate, concerning the need for 1000" of infiltration rate per hour. Which ASTM should be used? May I ask why 1000" of rate? The Heaviest recorded rainfall in North America was just 14.5" of rainfall in 1 hour (2002 hurricane Allison, Houston, TX). We normally specify a "Washed/Clean Uniform aggregate" with a "minimum void rate of 35%. This will give you a storage rate in 6" of material for a 2" event. Typically the 15% void rate in the Pervious Concrete pavement is not used for storm water calculations as most engineers consider it their buffer.

Answer 85: Please bid to the aggregate as described on drawing C-20-5.

Question 86: The 8" Porous pavement as specified on the sheet. I do not know the nature of this pavement use but for typical passenger vehicles 8" of regular concrete would be over kill and it is also with Pervious Concrete that is specified to have a Compressive strength of 3,500 psi at 28 days. We have a rule of thumb that says every 1" of excavation and materials cost about $150,000.00 per acre. We would normally see a "Generic Pervious Concrete" being spec'd in at 6" using most NRMCA guidelines and a typical StoneyCrete Pervious Concrete pavement at 5" for typical truck/car/light delivery traffic.

Answer 86: Please bid as designed.

Question 87: The "Pervious Concrete must be placed by a NRMCA Certified Contractor" reality is there are only 4 individuals considered fully qualified currently. 3 of which are from the same company and both firms from Central Florida were the Pervious Concrete originated in North America some 30 years ago. Both firms were "Grand-fathered" in due to their 25+ years of experience in the "Generic" pervious concrete field. The Certification classes just started in April of '06. (As of today there is work being done to reduce this requirement. Currently a 4 hour class and the observation of a pour makes someone a "technician" and NOT qualified as Certified)

With the advent of new design mixes and admixtures the degree of difficulty of installation has changed. Now, there are Pervious Concretes with similar strengths as standard solid concretes and can be poured at similar thickness. We normally work with local Concrete producers to develop design mixes using local materials to meet pavement design criteria. With NO CURRENT ASTM specifications available, (ASTM C 09.49 Pervious Concrete Sub-committee just formed in January 2007) most specifiers are using specific methods to determine Porosity/infiltration rates and strengths based on specified methods of cylinders, cores or beams.

We feel that with more specific specifications and the ability for a contractor to prove adequate training and/or experience and/or supervision, this placement of Pervious Concrete should not be complicated. Please advise.

Could you please address the opportunity for more current mix designs and admixtures to be considered. Also, the opportunity for local "Qualified" contractors without 3,000 hours of experience in Pervious Concrete to be eligible to bid on this project.

Answer 87: The Government relies on industry certifications to acknowledge the installer is qualified. The National Ready Mixed Concrete Association (NRMCA) is the recognized 3rd party certifying agent. There are 2 levels of certifications. Any company may employ one of these certified individuals to qualify the company. There are several companies in Texas with certifications. Please bid the contract documents. Also, this solicitation and the resultant contract will contain FAR Clause 52.248-3, Value Engineering—Construction.

Question 88: According to the 02755 section of the Specifications; there are numerous ACI, ASSHTO and ASTM standards that do not apply to Pervious Concrete. Those making reference to "Slump", "Water to Cement ratios", "Compressive strengths" and "Flexural Beams". The use of "Re enforcement that has not been specified to be "Non- corrosive". Curing methods using only liquids (2.3.1) and must maintain water on surface during first 48 hours (2.3.2). If this is a LEED project shouldn't "Bio-degradable form release agents be used. (2.4.4.) (2.5) Concrete Mix designs 3,500 psi compressive (NO ASTM available) and if so why 8" thick. Are you going to have heavy equipment placed regularly?

Answer 88: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 89: Part 3 Execution, Air entrainment Admixtures are typically NOT used due to the open nature of the design mix "without fines". (3.1.2) A natural void rate is produced with uniform aggregates. The target is usually 13% to 18% of the cured materials. Lower than 13% does not typically offer significant capillary action to produce a permeable surface. Over 18% and strengths drop precipitously. A 15% void rate is the ideal target, It will allow for infiltration rates above 4" to 6" per minute (240" to 360" per hour) and still maintain adequate rates of infiltration even when challenged by materials that would tend to clog like Organics (leaves) or foreign materials (heavy sand and silts). At this rate even if 90% of the surface were to become "Clogged" a flat surface would still take 24" in an hour. Far exceeding the heaviest rate as mentioned above.

In 3.1.4 NO air entrainments, NO slump, NO compressive numbers, No Beams have current ASTM standard methods available. Local standards are typically designed to meet project needs; such as, unit weights and specific methods for beams or cores.

Could you please specify?

Answer 89: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 90: 3.4 Ready-mix Concrete, Typically an in situ process for "Cured Void Rates of infiltration rates" are specified. Please do so.

Answer 90: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 91: Section 6 Tolerances in Slump - Slump can not be used (See ACI White papers) it is considered to be indeterminate in judging qualities of Pervious Concrete. Please advise

Answer 91: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 92: Section 11.7 Hours of Discharge. Typically, Pervious Concrete has a very low Water to Cement Ratio without allowances for admixtures to retard or stop hydration. Most loads will fall out of spec. Please advise.

Answer 92: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 93: 3.7.4. Finishing operations do not meet NRMCA specifications or any one else's for Pervious Concrete. Please advise.

Answer 93: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 94: 3.9.5. "Final Finish" Wet Burlap drag method. This would typically close Pervious Concrete surface voids. Please advise.

Answer 94: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 95: 3.10 Curing. "Wet" surface for 48 hours. This will be impossible for a pervious surface. Typically a "Poly Sheeting" is placed to prevent pre-mature evaporation of the water from the "Plastic material". This is critical in "Hot or Windy" conditions. The poly is left in place for 3 days, 7 days or 28 days depending upon the designing engineers specifications. For vehicular traffic a minimum of 7 days is typically specified. Please advise.

Answer 95: The specification is silent as to pervious concrete. Please bid per the drawings with minimum requirements, per NRMCA recommendations.

Question 96: 3.11 Joint sealants. Not typically found in a pervious surface. Please advise.

Answer 96: There is no requirement for joint sealers in pervious concrete.

Question 97: 3.12 Anti spalling treatments. None available in a Pervious Pavement design. Once the Plastic Design mix reached 20% hydration any re-tempering or attempt to place "fresh" materials adjacent a "Spalling" will take place. Typically NOT effecting strength but certainly effecting finish surface. Please advise.

Answer 97: There is no requirement for anti-spalling in pervious concrete.

Question 98: We would also like to know specific traffic designs so we might offer alternative bids based on these designs. Traffic type and count for specific time frames please. Also the proper method to offer them at time of bid, if possible. We also have "generic" Pervious Concrete Specifications under 02755 that we can make available for review in the interest of time, if you would find this helpful.

Answer 98: Please bid to the design.
